

We claim:

1. A flexible sensor for wirelessly determining a physical property in a patient's heart chamber, which sensor comprises a self-contained resonant circuit comprising a capacitor and an inductor, wherein the circuit is variable in response to the physical property of the patient, and wherein the sensor is sufficiently flexible to be folded for delivery percutaneously.

2. The sensor of Claim 1, wherein the capacitor is variable in response to the physical property of the patient.

3. The sensor of Claim 1, wherein the inductor is adapted to allow inductance of a current in the resonant circuit when the sensor is subjected to a time-varying electromagnetic field.

4. The sensor of Claim 1, wherein the physical property is pressure or temperature.

5. The sensor of Claim 4, wherein the physical property is pressure.

6. The sensor of Claim 1, wherein the sensor is disk-shaped.

7. The sensor of Claim 6, wherein the sensor has one or more metallic members attached to a flat surface of the sensor.

8. The sensor of Claim 6, wherein the sensor has one or more metallic members layered within the sensor.

9. The sensor of Claim 6, wherein the sensor has a metallic ring surrounding a portion of the edge of the sensor.

10. The sensor of Claim 1, wherein the sensor has a daisy or flower shape.

11. The sensor of Claim 1, wherein the sensor has a shape so that portions of the sensor can be folded at an approximately 90° angle to a substantially flat middle section.

12. The sensor of Claim 1, wherein the sensor has an anchoring system attached to a flat surface of the sensor.

13. The sensor of Claim 12, wherein the anchoring system is a coil.

14. The sensor of Claim 12, wherein the anchoring system has a projection with  
5 umbrella-like radial projections.

15. The sensor of Claim 1, wherein the sensor has one or more cut-outs to facilitate folding.

16. The sensor of Claim 1 or 15, which can be folded into a U-shape.

17. The sensor of Claim 1, wherein a safety wire is attached to one surface of the  
10 sensor.

18. The sensor of Claim 17, wherein the safety wire has a sheath.

19. The sensor of Claim 18, wherein the sheath can be slid distally to free the safety wire from the sensor.

20. The sensor of Claim 17, wherein the safety wire is attached to the sensor at an  
15 adhesive point.

21. The sensor of Claim 20, wherein the adhesive point comprises an epoxy or a cyanoacrylate material.

22. The sensor of Claim 1, wherein the primary material of construction is flexible, biocompatible polymer or co-polymer.

23. The sensor of Claim 22, wherein the polymer or co-polymer is selected from the group consisting of polyimide, polyethylene terephthalate, polytetrafluoroethylene, and co-polymers thereof.

24. The sensor of Claim 1, wherein there are no conductive connections or via holes to provide a direct electrical conduit between the upper inductor coil and the lower  
25 inductor coil.

25. The sensor of Claim 1, which contains a non-linear element and responds in a non-linear manner to an excitation signal.

26. The sensor of Claim 1, wherein the capacitance is distributed across an array of smaller capacitors.

5 27. The sensor of Claim 1, which can be folded so that a middle section remains substantially flat, the outer edges or surfaces are at substantially a 90° angle to said middle section, and a portion of the inductor is substantially coextensive with the outer edge.

28. The sensor of Claim 27, which is substantially daisy-shaped.

29. A sensor delivery system comprising:

10 a sensor of Claim 1,

an outer catheter having at least one lumen and a distal open end, and

an inner cylindrical member,

wherein the sensor is folded within the distal end of the outer catheter and the inner cylindrical member pushes the folded sensor out at a desired location.

15 30. The delivery system of Claim 29, wherein the inner catheter has a longitudinally extending lumen so that the delivery system can be slidably positioned over a guidewire.

20 31. The delivery system of Claim 29, wherein the sensor of Claim 1 has a safety wire attached thereto and said safety wire extends proximally in a longitudinally extending groove or lumen.

32. A flexible sensor for wirelessly determining a physical property in a patient's heart chamber, which sensor comprises a self-contained resonant circuit a variable in response to said physical property, wherein the sensor is sufficiently flexible to be folded for delivery percutaneously.

33. A flexible sensor for wirelessly determining a physical property in a patient's heart chamber, which sensor comprises a self-contained resonant circuit comprising a capacitor and an inductor, wherein the circuit is variable in response to said physical property, wherein the capacitor is variable in response to the physical property of the patient,
- 5 of the patient, wherein the inductor is adapted to allow inductance of a current in the resonant circuit when the sensor is subjected to a time-varying electromagnetic field, and wherein the sensor is sufficiently flexible to be folded for delivery percutaneously.

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